



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/583,881

06/21/2006

Michio Nishi

CU-4891 RJS

8922

26530 7590 05/18/2010  
LADAS & PARRY LLP  
224 SOUTH MICHIGAN AVENUE  
SUITE 1600  
CHICAGO, IL 60604

EXAMINER

CALANDRA, ANTHONY J

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

05/18/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                     |  |
|------------------------------|--|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/583,881   | <b>Applicant(s)</b><br>NISHI ET AL. |  |
|                              | <b>Examiner</b><br>ANTHONY J. CALANDRA | <b>Art Unit</b><br>1791             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-9 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1791

***Detailed Office Action***

The communication dated 2/10/2010 has been entered and fully considered.

Claims 1-3, 5-9, and 11-13 are currently pending. Claims 4 and 10 have been previously canceled.

***Response to Arguments***

Applicant's arguments filed 2/10/2010 have been fully considered but they are not persuasive.

***The applicant argues that the washing process of SATORU being completed three times therefore there would not be any additional motivation to provide further cleaning/washing of KAMO.***

The examiner notes that the reference inventor name is KAMO not KATO and has been corrected. SATORU does not state that the pulp is fully clean once the three steps process has been completed, therefore the person of ordinary skill in the art could still find use for the known cleaning apparatus of KAMO to further clean the stock in addition to the cleaning stages of SATORU.

The examiner notes that the washing/cleaning of SATORU is a dilution/extraction type stage. The fiber mass is diluted and then extracted. KAMO teaches a device where water passes through the pulp mass and is therefore a diffusion type washer. SMOOK shows that in the pulp and paper industry washers equivalent to 2.5-4 and 3-5 dilution/extraction stages are known and used [pg. 107 column 1 and Table 9-2] in a single diffusion washer. SMOOK additionally shows washing equipment such as the Beloit belt washer which has 5 washing stages [pg. 106 Figure 9-

Art Unit: 1791

17]. Furthermore more than one diffusion washer can be used in a row. Therefore since clean pulp is a desired attribute it cannot be said that the person of ordinary skill in the art would not combine both washing treatments of SATORU/KAMO to obtain a cleaner pulp.

***The applicant argues additionally the person of ordinary skill in the art would not be motivated to substitute one or two of the stages of SATORO with the washing of KAMO.***

As shown above SATORU teaches a simple dilution extraction cleaning method. The person of ordinary skill in the art would expect the washer of KAMO replacing two stages to SATORU to provide better washing. The examiner notes the person of ordinary skill would still be required to have at least one dilution stage as taught in SATORU because KAMO feeds the pulp through nozzle (4) [Figure 1]. KAMO describes the paper stock as a flowing material [column 5 lines 50-55]. For paper stock to be flowing it must first be diluted with water. Therefore the first dilution step of SATORU would be required to use the apparatus of KAMO.

**The applicant argues that the paper stock or pulp is different then the paper pieces of SATORU. The applicant points to paragraph [0008] of SATORO and argues that none of the paper stock/pulp of KAMO/SMOOK could be recovered by a sieve.**

The paper pieces are agitated into water in SATORU forming a pulp suspension. SATORU then describes sieving the pulp suspension. The applicant seems to argue that because the stock of SATORO does not pass through a sieve that it cannot be the same as the stock of KAMO/SMOOK which would pass through a sieve. The definition of sieve is as follows ‘A **sieve** is a tool used for separating solids from liquids or larger pieces of something from smaller

Art Unit: 1791

pieces. It consists of a metal or plastic ring with a wire or plastic net underneath, which the liquid or smaller pieces pass through.”

Pulp is retained by sieves in the papermaking art. For example the traditional papermaking machines retain pulp in the form of a wet paper sheet as the pulp travels over the fourdrinier table as described by SMOOK [pg. 228 column 1]. Even centuries old paper making techniques can be said to be sieving techniques. The ancient papermaking technique in China sieved a pulp suspension through a fine screen [pg. 228 paragraph 1]. In neither of these sieving cases did the pulp fibers pass through the screen.

Further the operation of the apparatus of KAMO is a sieving operation. The paper stock enters the apparatus and water is sprayed onto the paper stock. The water drains through a fine mesh in KAMO or a sieve [column 4 lines 44-52]. Again the paper stock does not pass through the sieve of KAMO as asserted by the applicant.

***The applicant makes the same arguments for the apparatus claims as the arguments for the method claims.***

Please see arguments above.

Art Unit: 1791

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1, 2, 6, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-142638 SATORU et al., hereinafter SATORU, in view of U.S. Patent 6,470,898 KAMO, hereinafter KAMO.

*Examiner has included machine translation to English of the SATORU reference which shall be referred to in the below rejection.*

As for claims 1, SATORU discloses a method for recovering paper from gypsum board by separating the paper from said board (*A method of recovering a base paper for gypsum board, which is configured to recover a base paper for gypsum board from a waste material of gypsum board comprising a gypsum core and the base paper for gypsum board adhering thereto* [abstract, paragraph 0002]). SATORU discloses a crushing step prior to a heating step (*breaking*

Art Unit: 1791

*the waste material of gypsum board* [paragraph 0002 and paragraph 0008]). Subsequent to the heating step the crushed gypsum and paper is separated by way to a sieve (*separating a gypsum component and a paper piece of the base paper for gypsum board from the broken waste material of gypsum board* [paragraph 0008]). SATORU discloses adding water to the recovered paper, agitating the paper water mixture and the separating adhered gypsum. SATORU completes this operation three times. SATORU does not appear to disclose using a washing drum to complete the washing operation (*washing the separated paper piece with water using a rotary drum-type washing device so as to eliminate a gypsum component adhering to the paper piece* [paragraph 0008]).

KAMO discloses a washing drum for [abstract] for cleaning pulp. KAMO discloses that the pulp is fed at one end of the rotary drum and leaves out the other end of the rotary air-water through flow drum [column 1 lines 43-45, lines 52-56 and Figure 1 'A' progresses from (4) to (5)]. KAMO further discloses a supply of water to the paper inside the drum (*wherein the rotary drum-type washing device comprises a paper piece inlet at one end of rotatably lying air and water through-flow drum and a paper piece outlet at the other end thereof and is capable of supplying washing water to a paper piece in the air and water through-flow drum* [column 2 lines 10-12 and Figure 2 (17)]).

At the time of the invention it would have been obvious to additionally wash the agitated used paper of SATORU in the washing device of KAMO. The person of ordinary skill in the art would be clearly motivated to use the washer of KAMO to obtain a clean pulp as KAMO states that the washer enhances filtration and dehydration to give a high cleaning effect [column 1 lines 60-63].

Art Unit: 1791

Alternatively, KAMO discloses a second known type of washing used paper of contaminants. A person of ordinary skill in the art would reasonably expect that by substituting for or in combining the unit of KAMO with the unit SATORU that the paper would be washed. It is *prima facie* obvious to substitute/combine one known component for the same purpose with another known component for the same purpose absent evidence of unexpected results. The person of ordinary skill in the art would expect both washing methods of SATORU and KAMO to clean impurities from the pulp.

As for claim 2, as stated above SATORU discloses that prior to separating gypsum from the paper and subsequent to crushing the gypsum board, the crushed material is heated in a rotary kiln [paragraph 0004].

As for claim 6, SATORU discloses that 1.31 kg of paper with gypsum is added to 20 Liters of water or about 1:15.26, paper to water ratio which is slightly outside of the instant claimed range [paragraph 8]. However, absence evidence of criticality it would have been obvious to optimize the concentration of paper in water used in agitation.

*Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”)*



Art Unit: 1791

As for claim 12, KAMO discloses a rotary drum for washing paper stock, wherein the wash water discharges out the peripheral wall of the drum [column 6 lines 25-30].

2. Claims 3, 5, 7-9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-142638 SATORU et al., hereinafter SATORU, in view of U.S. Patent 6,470,898 KAMO, hereinafter KAMO, and Handbook for Pulp and Paper Technologists by SMOOK.

As for claims 3, 7, 8 and 11, SATORU teaches all the limitations as per above. SATORU discloses a crushing device for breaking up the gypsum board (*a device configured to break a waste material of gypsum board* [paragraph 0002 and paragraph 0008]). SATORU further discloses a sieve for separating gypsum from the paper (*a device configured to separate a burnt gypsum component and a paper piece from the broken waste material of gypsum board* [paragraph 0008]). SATORU discloses a device in which water is added to the recovered paper, agitating the paper water mixture and the separating adhered gypsum (*previously dispersing or mixing the separated paper piece into a portion of washing water before the separated paper piece is introduced to the rotary drum-type washing device*). SATORU completes this operation three times. SATORU does not appear to disclose using a washing drum to complete the washing operation or disclose a dewatering device (*a rotary drum-type washing device configured to wash the separated paper piece with water so as to eliminate a burnt gypsum component adhering to the paper piece, and a device configured to dewater the water-washed paper piece* [paragraph 0008]).

KAMO discloses a washing drum for washing pulp [abstract] for cleaning pulp. KAMO discloses that the pulp is fed at one end of the rotary drum and leaves out the other end of the rotary air-water through flow drum [column 1 lines 43-45, lines 52-56 and Figure 1 'A']

Art Unit: 1791

progresses from (4) to (5)]. KAMO further discloses a supply of water to the paper inside the drum (*wherein the rotary drum-type washing device comprises a paper piece inlet at one end of rotatably lying air and water through-flow drum and a paper piece outlet at the other end thereof and is capable of supplying washing water to a paper piece in the air and water through-flow drum* [column 2 lines 10-12 and Figure 2 (17)]).

At the time of the invention it would have been obvious to additionally wash the agitated used paper of SATORU in the washing device of KAMO. The person of ordinary skill in the art would be clearly motivated to use the washer of KAMO to obtain a clean pulp as KAMO states that the washer enhances filtration and dehydration to give a high cleaning effect [column 1 lines 60-63].

Alternatively, KAMO discloses a second known type of washing used paper of contaminants. A person of ordinary skill in the art would reasonably expect that by substituting or in combining the unit of KAMO with the unit SATORU that the paper would be washed. It is *prima facie* obvious to substitute/combine one known component for the same purpose with another known component for the same purpose absent evidence of unexpected results. The person of ordinary skill in the art would expect both washing methods of SATORU and KAMO to clean impurities from the pulp.

Neither KAMO nor SATORU disclose the steps that occur after washing of the recovered pulp. SMOOK discloses that the paper pulp can be made into paper via a paper machine [pg. 16-1]. SMOOK discloses that the paper slurry is drained and dewatered on the fourdrinier table and pressed in the press section [pg. 228 Figure 16-1]. At the time of the invention it would have

Art Unit: 1791

been obvious to the person of ordinary skill in the art to dewater and press the pulp formed by the process of KAMO and SATORU is the paper machine of SMOOK. The person of ordinary skill in the art would be motivated to do so to make paper which has a higher value than pulp fibers.

As for claim 5, SATORU/KAMO fail to disclose the amount of wash water used during washing of the pulp in the rotary drum. However, the amount of wash water used is a clear result effective variable according to SMOOK [pg. 108 Figure 9-21]. SMOOK discloses as the DF or amount of water on pulp goes up the washing efficiency goes up. Therefore at the time of the invention it would have been obvious to optimize the dilution factor or amount of water used to wash the pulp of SATORU/KAMO.

An estimate of the wash water used can be calculated assuming an outlet consistency of ~10% of rotary washer of KAMO. Given a DF of 4 from SMOOK {tons wash water - tons water in discharged pulp = DF} and assuming the outlet consistency of is 10% then the total wash water would be 13 tons of wash water per ton of pulp [consistency of 10% = 9 tons water per ton pulp 9 + 4 tons per ton additional water = 13 tons water per ton pulp].

As for claim 9, SATORU discloses a rotary kiln prior to separating gypsum from the paper and subsequent to crushing the gypsum board which is a device configured to burn the broken waste gypsum board [paragraph 0004].

As for claim 13, KAMO discloses a rotary drum for washing paper stock, wherein the wash water discharges out the peripheral wall of the drum [column 6 lines 25-30].

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony J Calandra/  
Examiner, Art Unit 1791

/Eric Hug/  
Primary Examiner, Art Unit 1791